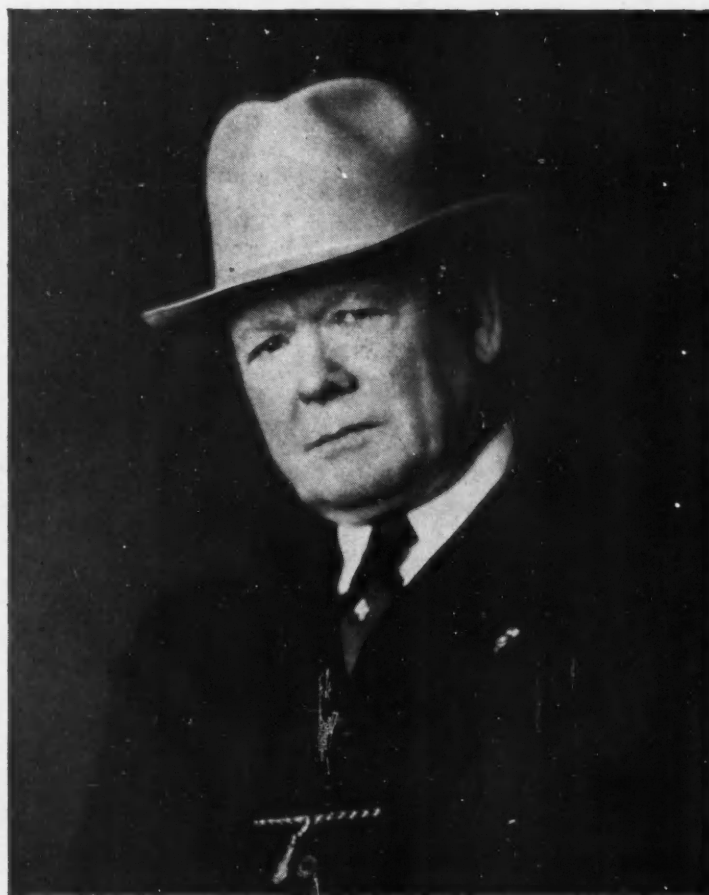


Citrus Industry



HON. NATHAN MAYO
Florida Commissioner of Agriculture

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SWIFT'S PROGRAM FOR CONTROLLED TREE FEEDING WILL BE EXTENDED TO MORE FLORIDA GROWERS....

We are glad to report that the new plant food and insecticide factory at Winter Haven is under construction according to schedule. Its completion will make the Swift Program for Controlled Tree Feeding available to more Florida citrus growers. This means more grove owners can profit through time proved, expert advice on tree feeding and grove management.

The Swift Program has brought many run-down groves up to top production of high quality citrus fruit in the shortest possible time. It's the combination of trained grove experts careful inspections and properly balanced plant foods applied at the right time in the right way that makes the Swift Program for Controlled Tree Feeding so profitable for owners.

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BARTOW, FLA

Use Of DDT To Control The Little Fire Ant

The little fire ant (*Wasmannia auropunctata* (Roger)) is a serious pest to citrus grove workers in some sections along the east coast of Florida. The ants nest in the soil or under debris, such as fallen branches and fallen leaves, and visit the citrus trees to obtain honeydew secreted by whiteflies, mealybugs, aphids, and other insects found on citrus. In some groves great numbers of these ants are present, and it is impossible for workers to pick fruit, prune, or spray without becoming covered with them and being stung many times. A single sting causes considerable irritation to most individuals. The characteristic symptoms are a welt surrounded by a red, splotchy area, and a severe burning and itching sensation which may prevail for 30 minutes or more. Even after most of these symptoms

By Max R. Osburn and N. Stahler
United States Department of Agriculture, Agricultural Research Administration Bureau of Entomology and Plant Quarantine at Meeting of Florida State Horticultural Society.
Division of Fruit Insect Investigation.

disappear, the itching may recur at intervals for several days. Workers in citrus groves, especially fruit-picking crews, have refused at times to work in trees infested with this ant. In other instances pickers have left the trees partially picked, or have demanded a premium wage.

Results of experimental work conducted during the last few years on the control of this pest, in which poisoned baits and other insecticidal treatments were tested, have not been satisfactory. Sprays

containing oil, pyrethrum, derries, or dinitro-O-Cyclohexylphenyl will destroy many ants, but heavy reinfestation occurs in a week or two following treatment. DDT has been found to be much more toxic, and to provide more permanent control than any other material tested. Although many factors affecting the use of DDT for control of this ant remain to be studied, early results of tests with it have been so outstanding as to justify the issuance of preliminary information concerning its use for this purpose.

While complete information as to the length of the protective period of different DDT formulations is not available at this time, a given quantity of technical DDT in fuel oil applied as an emulsion appears to be more effective than when applied in any other way. The pre-

(Continued on Page 7)

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Growers Are Considering Proposed Amendment

Amendments to marketing agreement No. 84 and Order No. 33, which regulate the handling of oranges, grapefruit, and tangerines grown in the State of Florida are being submitted to growers and handlers in Florida for consideration, the U. S. Department of Agriculture announced recently.

The amendments have been tentatively approved by the Secretary of Agriculture and are based upon the evidence presented at a public hearing held March 25 and 26, 1946, at Lakeland, Florida. The tentatively approved amendments would permit the regulation of Temple oranges and pink varieties of grapefruit separately from other varieties of oranges and grapefruit. They also would make possible regulations which would prohibit shipments of any variety of Florida oranges, grapefruit, or tangerines.

Regulations suspending or prohibiting shipments would be limited to not more than 14 days during the period December 20 to January 20 of any season. Pre-Christmas shipments of citrus fruits are usually very heavy, but not all the fruit is immediately absorbed by the holiday market. Primary purpose in temporarily suspending shipments for a short period is to enable the market to absorb these accumulated holiday supplies before additional shipments are brought in from the producing area. Such action would promote orderly marketing but would not diminish total citrus supplies, since at that time, fruit in the producing area can be held on the trees.

In addition, the amendments would limit to three the consecutive terms of office of members of the Growers Administrative Committee and Shippers Advisory Committee. This limitation would not become effective until July 31, 1947.

The amendments to the marketing agreement are being submitted to handlers of Florida citrus fruits for their signature. Growers of Florida citrus will vote in a referendum to determine whether they favor the issuance of similar

amendments to the order. The time and manner of voting will be announced by the Fruit and Vegetable Branch, Production and Marketing Administration, U. S. Department of Agriculture.

Honey bees are essential in production of seed crops of clovers and other legumes, cabbage, cauliflower, collards, onion, pepper, carrot radish rutabaga, soy bean, sunflower, and turnips.



Double Feature...

Proper maintenance of grove health this summer will return the grower increased income THIS season in the crop that is now on the trees . . . and NEXT season too, as trees are enabled to store healthy bloom-wood for the following crop.

The grower has a right to demand this Double Feature in the fertilizer he uses this summer. We believe that NACO 5-Star Brands are best qualified to give a satisfactory performance in both features because they contain the finest available organics, plus a balanced ration of the minor elements* so necessary to grove health.

Naco also offers a complete line of VOLCK OILS for your summer spraying program. They show superior results in scale control and have a wide margin of safety.

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a balanced ration of these elements:
* Zinc, Iron, Manganese, Magnesium, Copper,
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COMPANY JACKSONVILLE 1
..... FLORIDA



Publication office at Bartow, Florida. Entered as second class matter February 16, 1930 at the post office at Tampa, Florida, under the act of March 3, 1879. Entered as second class matter June 19, 1933, at the post office at Bartow, Florida, under act of March 3, 1879.

Reviewing The Season's Citrus Situation--President's Address

FRANK M. O'BRYNE

At Meeting of Florida State Horticultural Society at Miami

The saying that a poor beginning means a good ending applies with unusual force to the present citrus fruit season. A year ago we were in the midst of one of the most serious and prolonged droughts of which we have any record. Over fifty percent of the young fruit, which resulted from the large bloom in February 1945, shed, and quite a few trees, which had been damaged by two hurricanes in a year or weak from some other cause, gave up the struggle and died.

Then, June 23rd, we had a regular cloud burst and in the next thirty days we had thirty inches of rain—half of a normal year's rainfall. This resulted in the largest summer bloom of which we have any record. Roughly, sixty percent of our orange and grapefruit crop and fully eighty percent of our tangerine crop resulted from this late bloom.

We started to worry about the quality of this late bloom fruit. Would it be bad or good? We now know that the late bloom Hamlins were better than they generally are, but still "nothing to write home about" on the average. Late bloom pineapples, Valencias and other oranges were of very good quality while late bloom tangerines were wonderful—better by far than the early bloom this

season. But late bloom grapefruit, both early and Marsh seedless, were a distinct disappointment. They were thick and coarse skinned, and "sheep nosed" even where there was a heavy crop on the trees — good mainly for canning.

We were fearful that with the stopping of government purchases of processed fruit for the armed forces and Lend-lease, that our markets would break badly. A freeze in California and a late freeze in the north which eliminated most of the apple crop undoubtedly helped our citrus, for despite the wave of strikes throughout the nation, the market has held up nicely. All in all, the season of 1945-46 has been a very prosperous one.

Grove values have strengthened with the strengthening fruit prices. Good groves carrying good crops have been selling for \$2,000.00 per acre. Extra good groves, well located, have been bringing more. Most of these sales have been made to Florida citizens and many to people who already own groves. On the whole, northerners are not responsible for these prices.

I know of a ten acre grove which sold for \$3,000 in 1936, for

\$4,500 in 1938, for \$6,500 in 1942, and for \$20,000 in 1946. At first glance you would say the owner who bought the grove for \$6,500 and sold it for \$20,000 made a wise sale. Let's see how it figures out. The sales commission was \$1,000 which left him \$19,000 so that his profit was \$12,500, a fourth (\$3,125) of which he has to pay to the government which would leave him \$15,875 to re-invest. At four percent interest (and he will have a hard job getting more today) this would yield but \$635.00 income per year. The grove will yield on the average between five and ten times that return during the next five or ten years. That shows why Florida people are buying the groves that are now changing hands.

That brings us to the consideration of the hazards inherent in our industry. They are many and varied. There is the weather. We have had devastating colds in the past. We will have them in the future; so likewise, with droughts. Then, there is the matter of competing fruits. The greater the supply of competing fruits, the lower citrus prices are apt to be. Then, there is competition from California and Texas. It is real competition! Citrus production is increasing the world over—Spain, Palestine, Brazil,

(Continued on page 8)

Soil Conservation Work ... In Florida

Nature has placed in the hands of Florida people a great wealth in soil and water assets. In using them, they must accept the obligation to conserve them lest they become not an asset but a liability. A plot of land or a water facility can serve a man for only a lifetime. His posterity will inherit what is left—an asset that has been conserved and improved by wise and understanding stewardship; or a liability, depleted or destroyed by unwise, careless, and unscrupulous stewardship.

No nation, state, county, or individual can prosper in the use of resources for long without a definite and practical conservation program.

The watchword of the world today is conservation—conserve wheat conserve fats and oils, conserve food so that millions may not starve. An even better one is conserve the soil—that thin film on the land part of the earth—upon which man depends for food, clothing, and a large part of his housing. The objective is not to preserve the land for the land's sake, but to treat and use the land so that man may derive the greatest benefit from it over the longest period of time.

The farmer and his soil have completed four years of war production—the highest in history. Reconversion to peace time production has not brought about much immediate change in the demand on the land for continued high production. The land cannot escape irreparable damage, and, in some cases, complete destruction, unless applicable soil and water conservation practices are applied with the same degree of intensity. Without vigorous soil conservation Florida land will become less productive and less profitable as time goes on.

No period in history has offered greater opportunities to put conservation on the land than 1946. The farmer, as well as the business and professional man, is beginning to understand and appreciate conservation; seed of adapted species and varieties of conserving crops are available; the needed types of machinery to do the conservation job are now moving from the manufacturer to the farmer; and more

T. K. McCLANE, JR.
Extension Conservationist

manpower is being released by the military forces. Now is the first time in many years that many farmers have realized sufficient profit from their lands to afford some of the more costly practices.

In addition to the favorable factors mentioned, the greatest program ever attempted on soil and water conservation is now in progress. Farmers and growers, working with the Federal, State, and local government, are applying an extensive and comprehensive program to the land through Soil Conservation Districts.

What are Soil Conservation Districts . . . Soil conservation districts are legally constituted units of local government established under

a State law enacted by the 1937 legislature. The purpose of a district is to furnish farmers, growers, and ranchers an organized and more effective means for planning and carrying out soil and water conservation and improved land use measures on an individual farm, community, county, or larger area basis. This approach to attacking and solving conservation problems is entirely a cooperative and voluntary effort. There are now 33 districts operating in Florida, and three more petitions for districts have been received by the State Soil Conservation Board. Most of these are set up on a county basis and comprise more than half the total area of Florida.

Districts are established only upon the petition of land owners, and then not until the will of the majority has been expressed in a re-



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ferendum. The districts are controlled and operated by a board of five supervisors, all of whom are elected by the land owner farmers in the district. Every land owner has a voice in shaping the policies of the district in which he lives. The voice of a one-horse farmer or one-acre grove owner is just as strong as a large scale operator.

A district is farmer-formed and farmer-operated for farmers. It has no authority outside of the district and it has no taxing or bonding power. Not a step is taken, not a plan made, not a practice is placed upon the land that does not first have the concurrence of a majority of the land owners affected. In carrying out the work of conservation within a district, the board of supervisors may call upon local, State, and Federal agencies for such assistance, (technical and otherwise) as the agency may be in a position to provide.

The Agricultural Extension Service assists the districts in an educational and organizational capacity through the service of the county agent and the Extension Soil Conservationist.

The Soil Conservation Service cooperates with the districts by assigning trained conservation technicians to assist individuals or communities with their problems. These technicians develop soil surveys, and, with the farmer, make plans for the best use of the land.

The aid given by the Production and Marketing Administration, (formerly the AAA) has been used by farmers to finance, in part, a much more extensive conservation program than otherwise would have been possible. This has consisted of direct benefit payments for carrying out conservation practices or, in some cases, actually furnishing the materials for practices.

1945 was the greatest of all years in conservation farming in spite of the heavy production of food and feed. Incomplete reports indicate a tremendous increase in the acreage planted to blue lupine—a rather new winter growing legume. Also, nearly 40,000 acres of improved pasture grasses were planted last year. Many conservation districts have procured valuable equipment such as tractors, trucks, draglines, combines, lime spreaders, seeders, weed choppers, and many other small implements.

Each year, millions of dollars worth of plant food is being lost forever from our soils by erosion and leaching. Each hour of delay

is costly. NOW is the time to put conservation on the land—not after the fertility of the soil is completely gone. The old adage, "There's no need to lock the stable after the horse is stolen," has never been truer than when applied to conservation of the soil.

Poor land supports a poor social order. Good land produces a prosperous, healthy, and happy society.

USE OF DDT TO CONTROL THE LITTLE FIRE ANT

(Continued from page 3)

ferred formulation consists of the following:

Technical DDT, $\frac{1}{4}$ to 1 pound.

No. 2 fuel oil, 1 gallon.

Glyceryl oleate, 1.3 fluid ounces (38 ml.).

Water to make 100 gallons.

This formulation is prepared for use by dissolving the DDT in the fuel oil and then emulsifying the

solution with the glyceryl oleate. Undoubtedly other emulsifiers of a similar nature would be equally satisfactory. Applied to the entire inside of the tree, sprays containing $\frac{1}{2}$ and 1 pound of DDT per 100 gallons have controlled this ant and prevented reinfestation for a period of a year, while $\frac{1}{2}$ pound per 100 gallons of spray has done so for 9 months.

Other DDT formulations applied as sprays and dusts have given control and prevented reinfestation for at least 2 months. Such formulations include.

(1) $\frac{1}{4}$ pound of technical DDT dissolved in $1\frac{1}{4}$ gallons of emulsive spray oil and diluted with water to make 100 gallons of spray.

(2) 40 ounces of a mixture containing 10 percent of technical DDT in pyrophyllite ($\frac{1}{4}$ pound of DDT) mixed with water to make a paste and then added to water to

Continued on page 11)

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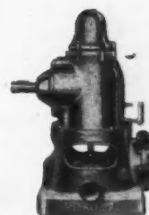
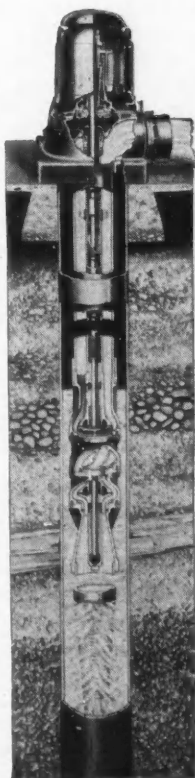
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REVIEWING THE SEASON'S CITRUS SITUATION

PRESIDENT'S ADDRESS

(Continued from page 5)

Argentine, etc. The greater the supply of citrus, the lower will be the demand. Then, there is the matter of economic conditions. Groves are not profitable during a depression. We hope sincerely that employment will remain high for there is generally an orange or tangerine in "the full dinner pail."

There is little we can do to protect ourselves against most of these hazards except droughts; but, there is another very real hazard which we face against which we can do a great deal. I refer to the danger of introducing insect and disease pests from foreign countries.

Everyone should pay a visit to the Pan-American Airport while here. There are more planes and more passengers from foreign countries arriving at this airport than at any other in the world. Some days as many as 67 different planes from foreign countries land at the Miami Airport alone. At present many hundreds of persons are entering Florida from foreign countries. Anyone of them might bring in some new or serious insect or disease in his baggage or pocket.

I urge every member of the Society to hear the talk by our Plant Commissioner, Hon. A. C. Brown. I want to point out a few pertinent facts because some twenty years ago I was connected with the Plant Board for ten years. First, we are just entering the air age. Foreign travel into Florida is certain to increase by leaps and bounds. Second, air travel is fast. A man can get onto a plane on a rainy day in a foreign country and the clay will still be sticking to his shoe soles when he steps off onto the sands of Florida. Third, a pest of little consequence in another country may hold the most serious threat to plants in this state. For example, the Japanese didn't know they had Citrus Canker until it began to "go to town" in Florida. Such instances can be multiplied dozens of times. Fourth, it is far cheaper and safer to keep pests out of the state than to eradicate them after they have been introduced. Fifth, Florida has been most successful in its eradication campaigns; notably with Citrus Canker, Black Fly, Mediterranean Fruit Fly, etc. What we have done

before, we can do again if we have to. We have the men who know how, and a favorable geographic situation. Sixth, the success of an eradication depends on detecting the pest before it has become firmly or widely established.

It is for these reasons that Florida growers must see to it that the grove inspection department of the State Plant Board is kept at top efficiency. I agree that we should strengthen our Plant Quarantine law and our Quarantine Inspection Force and investigate pests in foreign countries. When some pest gets by, as it surely will in time, we will need a second line of defence badly, and that is the Grove Inspection Force. Let us see that it is kept at top efficiency.

There is a danger connected with the interest in aviation against which we should guard. I refer to the tendency for new towns to have themselves designated "ports of entry." As indicated, each port of entry is a danger spot where foreign pests may be introduced. If a new pest is introduced at Miami or such seaport, it can only spread in a semicircle but if introduced at Orlando or Lake Wales, it can spread in all directions. There is an effort being made at Lake Wales and a number of other inland towns to become ports of entry by air. From a horticultural point of view, it would be most unfortunate if these efforts should succeed. We need fewer ports of entry in our state, not more! I urge all the members of the Society to give this important matter their earnest consideration. Think the matter through: then act.

At our last meeting this Society passed a resolution instructing its officers to call a meeting made up of representatives of all of Florida's citrus organizations to provide ways and means for sending scientists to South America to study the "Tristeza" disease of trees budded on sour orange stock. This meeting was held in Orlando, October 31, 1945, and resulted in the following committee being appointed:

Charles, H. Walker, Bartow, representing Trade Ass'n.

Thomas W. Bryant, Lakeland, representing State Board of Control.

Arthur C. Brown, Gainesville, representing State Plant Board.

H. B. Snively, Lake Hamilton, representing Florida United Growers.

Charles A. Stewart, Auburndale,

representing Florida Citrus Commission.

James C. Morton, Auburndale, representing Florida Farm Bureau.

Frank M. O'Byrne, Lake Wales, representing Florida State Horticultural Society.

This committee had a meeting with Governor Millard Caldwell in Bartow on November 19, 1945. Several of his Cabinet were present. Dr. A. F. Camp made a report on the disease and estimated that the cost of buildings, salaries and other necessary expenses for a year's investigation would approximate \$60,000. The hope was expressed that Texas might supply \$20,000, California a like amount, and Florida the balance. Thomas W. Bryant expressed the concern of the Board of Control and said that it was willing to send Dr. Camp to California and Texas to present the matter and solicit their cooperation. Governor Caldwell expressed himself as thinking we were wise to study this disease in the other country rather than wait until it was established here before starting our study. He assured us of his support when we knew how much money Florida would have to furnish. Charles H. Walker said that the study should be made even if Florida had to finance the entire venture alone. There was an unanimous agreement that the citrus growing states should direct and finance most of the investigation.

Dr. Camp made his visit to California and Texas just before Christmas. We know that he presented the matter well; he always does. After considerable discussion and the exchange of a number of letters, the California State Board of Agriculture passed a resolution asking the United States Department of Agriculture to undertake the investigation of Tristeza. They regretfully declined to help financially. Texas citrus growers are not as well organized as they are in either California or Florida and their citrus area is but a small spot in a very large state; but 99 per cent of their citrus trees are on sour orange stock and they are deeply concerned. They do not feel like asking the U. S. Government to assume a task that they feel they should have a more direct connection with and they feel that Dr. Camp is the man to head this investigation. Under the able leadership of Mr. E. M. Goodwin of Mission, Texas, the Texas citrus

(Continued on page 17)

Soil Moisture Factors of Importance In Avocado Grove Management

(Concluded from last month)

In most of these soils the wilting point of the surface is about 2 per cent, and that of the sub-soil, about 1.5 per cent. The available moisture capacity of the top three feet of all but a few lies between about 1.5 and 2.5 acre inches per acre.

On deep, well-drained soils it is unlikely that trees would wilt before the moisture content of the top three feet of soil has been re-

J. R. FURR
Bureau of Plant Industry Soils and
Agricultural Engineering, United
States Department of Agriculture,
Orlando, at Meeting of
Florida Horticultural Society

duced to about the wilting point, so that on soils similar to those listed here it may be supposed that 1.5 to 2.5 acre inches per acre would be required to wet them to

three feet. In applying irrigation water, of course, not all of the water applied will be retained in the layer of soil that it is intended to wet. Some water will be lost by surface evaporation and run-off, and in sandy soil, probably much more by percolation to depths below root zone. That is, in low areas, such as middles that have been "dished" out by repeated disking toward the trees, much more water may penetrate the soil than is required to wet it to field capacity, and, if so, will be lost to depths below the root zone.

The efficiency of application, that is, the percentage of water retained in the soil of the root zone, may be affected by rate, uniformity, and amount of the application of water, and by variations in slope, permeability, and "wettability" of the soil. An efficiency of 80 per cent is considered high, and 40 per cent to 65 per cent is probably more usual. Water may be applied with fair to high efficiency as a spray from pipe fitted with sprinklers, or as a single stream by the method of flooding from slip-joint pipe on nearly level land or on land of uniform and gentle slope. On land of very irregular or steep slope it is difficult to attain high efficiency by any method, but sprinkling lends itself to higher efficiency than other methods on such land.

It may be fairly assumed that when trees on soils similar to most of those listed here are wilting, the top three feet of soil may be wetted to field capacity by about 2 to 3 acre inches, or 54308 to 71462 gallons of water per acre, if it is applied uniformly over practically entire surface and does not run off of the tree rows and collect and penetrate mostly in the middles. In deep sandy soils free from dense layers near the surface, there is very little lateral movement of water, so that nearly all of the water will go straight down at the point of entry.

Moisture Extraction as an Indication of Extent and Depth of Citrus Root System

To obtain some idea of the depths on light sandy soils at which
(Continued on page 12)

Table 2. First Permanent Wilting Point, Field Capacity, and Available Moisture Capacity of Some Citrus Grove Soils.

| Soil Type and Location | Depth (Feet) | First Permanent Wilting P't. (Percent) | Field Capacity (Percent) | Available Moisture Capacity Per depth interval (Acre-inches per acre) | Per av. foot of depth interval |
|------------------------|--------------|--|--------------------------|---|--------------------------------|
| Norfolk | 0.0-1.0 | 1.9 | 6.1 | 0.65 | 0.65 |
| fine sand | 1.0-3.0 | 1.4 | 5.2 | 1.19 | .59 |
| Windermere | 0.0-3.0 | — | — | 1.84 | .61 |
| Norfolk | 0.0-0.5 | 1.8 | 4.9 | 0.24 | 0.48 |
| fine sand | 0.5-3.0 | 1.7 | 4.7 | 1.17 | .47 |
| Davenport | 0.0-3.0 | — | — | 1.41 | .47 |
| Blanton | 0.0-1.0 | 2.1 | 8.0 | 0.92 | 0.92 |
| fine sand | 1.0-3.0 | 1.9 | 6.7 | 1.50 | .75 |
| Wiersdale | 0.0-3.0 | — | — | 2.42 | .81 |
| Leon | 0.0-0.5 | 2.9 | 9.0 | 0.48 | 0.96 |
| fine sand | 0.5-3.0 | 2.5 | 8.0 | 2.14 | .86 |
| Citra | 0.0-3.0 | — | — | 2.62 | .87 |
| Blanton | 0.0-0.5 | 1.8 | 7.6 | 0.45 | 0.90 |
| fine sand | 0.5-3.0 | 1.3 | 6.5 | 2.03 | .81 |
| Citra | 0.0-3.0 | — | — | 2.48 | .83 |
| Norfolk | 0.0-0.5 | 1.3 | 5.0 | 0.29 | 0.58 |
| fine sand | 0.5-3.0 | 1.0 | 4.0 | 1.17 | .47 |
| Killarney | 0.0-3.0 | — | — | 1.46 | .49 |
| Blanton | 0.0-0.5 | 1.5 | 4.6 | 0.24 | 0.48 |
| fine sand | 0.5-3.0 | 1.3 | 4.5 | 1.25 | 5.48 |
| Windermere | 0.0-3.0 | — | — | 1.49 | .50 |
| Blanton | 0.0-0.5 | 1.4 | 4.7 | 0.26 | 0.52 |
| fine sand | 0.5-3.0 | 1.8 | 5.5 | 1.44 | .58 |
| Windermere | 0.0-3.0 | — | — | 1.70 | .57 |
| Parkwood | 0.0-0.5 | 11.5 | 23.0 | 0.90 | 1.80 |
| fine sand | 0.5-3.0 | 5.1 | 11.0 | 2.30 | 0.92 |
| Mims | 0.0-3.0 | — | — | 3.20 | 1.07 |
| Norfolk | 0.0-0.5 | 2.1 | 7.0 | 0.38 | 0.76 |
| fine sand | 0.5-3.0 | 1.2 | 4.0 | 1.09 | .44 |
| Mims | 0.0-3.0 | — | — | 1.47 | .49 |
| Norfolk | 0.0-0.5 | 2.3 | 8.0 | 0.44 | 0.88 |
| fine sand | 0.5-3.0 | 1.3 | 5.0 | 1.44 | .58 |
| Mims | 0.0-3.0 | — | — | 1.88 | .63 |
| Norfolk | 0.0-0.5 | 1.9 | 7.0 | 0.40 | 0.80 |
| fine sand | 0.5-3.0 | 1.2 | 4.5 | 1.29 | .52 |
| Merritt Is. | 0.0-3.0 | — | — | 1.69 | .56 |
| Palm Beach | 0.0-0.5 | 2.7 | 11.0 | 0.65 | 1.30 |
| fine sand | 0.5-3.0 | 1.4 | 5.0 | 1.40 | 0.56 |
| Wabaso | 0.0-3.0 | — | — | 2.05 | .68 |

The Citrus Industry

with which is merged The Citrus Leaf
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GOOD APPOINTMENTS

Following out the recommendations of the Citizens Advisory Committee, Governor Caldwell has named six members of the Florida Citrus Commission to succeed members whose terms expired on June 1. Reappointed were: W. L. Storey of Winter Garden, Jeff Flake of Wauchula and L. S. Andrews, Jr., of Cocoa. New members are J. B. Prevatt of Tavares who succeeds A. S. Herlong of Leesburg in District No. 2; John A. Snively, Jr., of Winter Haven who succeeds W. L. Storey as a grower member from the state at large, while Storey is transferred from that position to member from District No. 4; R. A. Fender of Orlando was appointed shipper member from the state at large to succeed Charles A. Stewart of Lakeland.

All of the appointees are well known growers and shippers of the state; all have long been intimately connected with the industry and all have a high standing among their fellow growers and shippers. The hold-over members are: J. J. Schuman, Vero Beach; Rollie Tillman, Lake Wales; Latt Maxcy, Frostproof; C. C. Commander, of Tampa; and J. J. Taylor, of Ocala. Mr. Taylor, however, has tendered his resignation and another new member must be appointed by the Governor to fill that vacancy. Should the Governor show as good judgment in making that selection as he did in following the recommendation of the Citizens Advisory Committee, the new Citrus Commission will be fully as representative of the industry as the one which has so ably served the growers and shippers of the state in the past.

The Florida Citrus Commission has been of inestimable value to the citrus growers of Florida; has inaugurated many new projects and faithfully performed what has frequently been a thankless task. The Commission as now constituted may be expected to continue this service to growers with the same diligence and the same high purpose which has characterized the Commission since its first inception.

SUCCESSFUL SEASON NEARS END

The 1945-46 citrus season which got under way under serious handicaps, but which has proved to be one of the most successful that Florida citrus growers have known, is about

to come to a close. As this is written, probably not more than six, or at the most seven, million boxes of grapefruit and oranges remain for fresh fruit shipment and processing.

Up to this time canners have used more than 17,000,000 boxes of oranges and more than 20,000,000 boxes of grapefruit. It is confidently expected that by the close of the season canners will have utilized more than 40,000,000 boxes of citrus fruits as against a pack of approximately 30,000,000 boxes last season.

Prices received by growers for both fresh fruit shipment and for canning have been exceptionally favorable, canners at times paying such high prices as to compete successfully with the fresh fruit trade.

Then, too, the extremely favorable prices received for fruit has had a tendency to increase the sales value of the groves and to stimulate new and extensive plantings of new groves. Grove prices have doubled, trebled and quadrupled as compared with prices prevalent only a few short years ago. To what extent these prices may be justified, only the future can determine. It is noteworthy, however, that many of the grove transfers have been made to experienced growers who have long studied the citrus situation in Florida, and that many, if not most, of the sales have been on a cash basis.

All in all, the season has been most favorable to citrus growers and shippers and results have far exceeded expectations at the beginning of the season.

DDT TO FIGHT JAPANESE BEETLES

Entomologists of the United States Department of Agriculture who has been making an extensive study of the Japanese Beetle, now announce that "DDT is coming into the picture as an exterminator of the pest."

Announcement is made that "DDT is one of the most effective insecticides for the protection of fruit and foliage from attack by the adult Japanese beetles and for the control of grubs of the Japanese beetles in the soil."

While cautioning that "there is much yet to be learned before it can be recommended generally", the entomologists know that DDT is on the market and that many in heavily infested areas intend to use it against this season's beetles. The entomologists say:

"Ornamental trees and shrubs may be protected from attack by the adult beetle by spraying them just as the beetles begin to attack them. The spray is prepared by mixing one pound of actual DDT in the form of a wettable powder (for example, 2 pounds of 50 percent or 2.5 pounds of 40 percent mixture) in 100 gallons of water."

The statement warns that increased trouble with mites is likely to follow DDT spraying. It also says grub injury to lawns can be controlled by applying 10 percent DDT at the rate of 250 pounds to the acre (25 pounds of actual DDT) and that if applied as suggested such treatment will be effective for at least two years.

USE OF DDT TO CONTROL OF LITTLE FIRE ANT (Continued from Page 7)

make 100 gallons of spray.

(3) 20 or 10 ounces of a water-dispersible powder containing 40 percent of technical DDT ($\frac{1}{2}$ and $\frac{1}{4}$ pound of DDT mixed with water to make a paste and then added to water to make 100 gallons of spray.

(4) Same as (3) with addition of $1\frac{1}{2}$ gallons of an emulsive spray oil.

(5) A 3-percent commercial DDT dust containing 1 percent of petroleum oil.

(6) A 10-percent commercial DDT dust.

Two methods of applying the spray have proven satisfactory. One method involves spraying the entire inside of each tree, paying particular attention to covering the trunk, and the other involves thoroughly spraying only the trunk and heavy lower limbs. The first method requires about 12 gallons of dilute spray to do a thorough job on a 20-year-old grapefruit tree, whereas the second method requires only about 2 gallons. An effective formulation may prevent reinfestation for as long as 12 months when applied by the first method, and for only 1 or 2 months when applied by the second method. Advantages of the second method are the saving in material and less danger of adverse effects on bene-

ficial insects, because very little of the spray is deposited on the upper portion of the tree.

Dusts should be applied with a power outfit to two opposite sides of the trees, at the rate of about 1 pound of dust to a 20-year-old grapefruit tree. As with the sprays, particular attention should be given to covering the trunk and larger lower limbs.

No injury to grapefruit trees that have been sprayed or dusted with the formulations listed has been observed.

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SOIL MOISTURE FACTORS OF IMPORTANCE TO AVOCADO

(Continued from page 9)

citrus roots absorb appreciable amounts of water, soil samples were taken during a prolonged dry period to a depth of 8 or 10 feet in several groves on each of two soil types, Orlando fine sand and Norfolk fine sand. Since samples were taken at the "drip" of the tree the distance

depth sampled. The field capacity, the field moisture content, and the moisture deficiency expressed as percentage dry weight, as acre inches per acre for the depth interval are given in Table 3.

At most of the sites sampled some rain had fallen a few days before samples were taken. The top foot at Site No. 1 was at about field capacity. At Site No. 4, however, much of the top foot appear-

No. 2, which may have been irrigated some time before samples were taken. The moisture deficiency was sometimes greatest in the zones of highest field capacity, probably because at certain depths all of the available moisture was exhausted some time before the samples were taken. For example, it would appear from the field capacity values, which in these sands are about 3 times the wilting point values, that certain levels as follows: Site 1, 2-6 foot; Site 2, 1-2 foot; Site 3, 1-2 foot; Site 4, 1-4 foot; Site 5, 0-4 foot, were at about the wilting point when sampled.

The conditions are rare under which it would be possible to estimate relative root activity, that is, relative absorption rates at different depths, from a single sampling, and those conditions were not met in this instance. It is apparent, however, that during periods of drought the amounts of water absorbed by trees on deep light sand at depths below 3 or 4 feet may be very appreciable. In fact, at certain of these sites doubtless very little available moisture remained in the top 3 or 4 feet and yet the trees were not wilted.

The amounts of irrigation water, applied with an efficiency of 80 per cent, that would be required to wet these soils to field capacity to the depths sampled appear to be surprisingly high. The amounts calculated in acre-inches varies from 3.2 to 5.1; in gallons per tree, from 1554 to 2469. These data, however, suggest the possibility that on such soils the frequency of irrigation applications might be reduced by wetting as much of the area as possible to a depth of 6 or 8 feet when applications are made, and it would seem to be poor economy indeed to wet these deep soils to less than 4 feet at an application.

Conclusion and Practical Applications

The practical significance of the fact that a soil has a fairly definite field capacity and a wilting point is that: (1) a certain definite amount of water may be held by the soil in a certain depth zone. If more than this amount is applied, the excess will drain out; if less than this amount is applied, all of the soil will not be wetted. (2) Only a certain definite part of the total amount of water that may be held in the soil permitted by the root system of the tree is available to the tree. As the amount of available moisture is reduced throughout the zone, and exhausted in certain parts

Table 3. The Moisture Deficiency of Some Grove Soils During a Drought.

| Site No. | Des. of Site | Depth (Ft.) | Field Capacity (Pct.) | Moisture Content (Pct.) | Moisture Deficiency Per depth interval (Pct.) | Per acre (acre in per acre) | Per foot |
|----------|---|--|--|--|--|--|--|
| 1. | Seedling Orange, 22'x22' Orlando fine sand Sample 11 ft. from trunk | 0-1 1-2 2-4 4-6 6-8 8-9 9-10 | 5.3 4.9 3.9 3.7 3.0 13.4 13.7 | 5.9 2.4 1.0 1.2 2.2 8.4 10.0 | 0.0 2.5 2.9 2.5 0.8 5.0 3.7 | 0.0 0.39 0.95 0.78 0.25 0.78 0.58 | 0.0 0.39 0.47 0.39 0.12 0.78 0.58 |
| 2. | Grapefruit, 25'x25' Orlando fine sand Sample 12½ ft. from trunk | 0-1 1-2 2-4 6-8 8-9 4-6 | 7.6 7.2 4.6 3.2 5.3 3.3 | 4.3 2.4 2.0 2.9 3.8 2.8 | 3.3 4.8 2.6 0.3 1.5 0.5 | 3.73 0.51 0.75 0.81 0.09 0.23 0.16 | 0.37 0.51 0.75 0.40 0.04 0.23 0.08 |
| 3. | Orange (Parson Brown), 24'x24', Orlando fine sand Sample 8 ft. from trunk | 0-9 0-1 1-2 2-4 4-6 6-7 7-8 8-9 9-10 | 9.3 6.9 5.0 4.3 5.7 6.5 6.4 5.1 | 4.8 3.2 2.6 2.7 3.3 3.5 3.6 3.5 | 4.5 3.7 2.4 1.6 2.4 3.0 2.8 1.6 | 2.55 0.70 0.58 0.75 0.50 0.37 0.47 0.44 0.25 | 0.28 0.70 0.58 0.37 0.25 0.37 0.47 0.44 0.25 |
| 4. | Grapefruit, 25'x25' Norfolk fine sand Sampled 19 ft. from trunk | 0-10 0-1 1-2 2-4 4-6 6-8 8-10 | 13.3 3.9 3.5 2.8 3.1 3.4 | 1.5 1.2 1.1 1.7 2.2 2.9 | 11.8 2.7 2.4 1.1 0.9 0.5 | 4.06 1.84 .42 .75 .34 .28 .16 | 0.41 1.84 .42 .37 .17 .17 .08 |
| 5. | Orange (Parson Brown), 24'x24' Norfolk fine sand Sampled 8 ft. from trunk | 0-10 0-1 1-2 2-4 4-6 6-7 7-8 | 5.3 4.0 3.1 2.4 17.4 17.4 | 1.8 1.2 0.9 1.5 12.6 11.8 | 3.5 2.8 2.2 0.9 4.8 5.6 | 3.79 0.55 .44 .69 .28 .75 .87 | .38 0.55 .44 .34 .14 .75 .87 |
| 6. | Orange (Hamlin), 24'x24' Norfolk fine sand Sampled 6ft. from trunk | 0-8 0-1 1-2 2-4 4-6 6-7 7-8 0-8 | 4.6 3.4 3.2 2.8 6.2 7.1 | 2.1 2.3 1.6 1.3 3.0 5.1 | 2.5 1.1 1.6 1.5 3.2 2.0 | 3.58 0.39 .17 .50 .47 1.00 .62 | .45 0.39 .17 .25 .23 1.00 .62 |
| | | | | | | 3.15 | .39 |

from the trunk at which the samples were taken gives an indication of the size of the trees at each site. Moisture determinations, and estimates of field capacity by the laboratory method were made on the samples. From these data, the moisture deficiency, that is, the difference between field capacity and the moisture content at the time of sampling, was calculated for each

ed to be air dry. At the other sites rain had probably not penetrated below the top foot, except at Site 6, where the second foot had apparently been partly wetted.

The moisture deficiencies expressed as inches per average foot, which puts findings for all depth intervals on a comparable basis, shows little relation to the depth from the soil surface, except at Site

of the root zone, the amount of foot surface that may function in water absorption is also reduced. As increasing proportions of the absorbing root surface cease to function in water absorption, the water deficit of the tree becomes greater and finally temporary or even permanent wilting results.

Systematic sampling for determination of soil moisture percentages is not practicable for general grove irrigation management. Such work is done merely to obtain a clearer conception of the conditions that affect the trees. With frequent and careful observations in the grove as a basis, the principles of soil moisture control may be applied to practical grove irrigation management. It is essential that the observer be able to tell when the soil at various depths in the root zone is near the wilting point, so as to determine when water should be applied. He should also examine the soil after an irrigation to determine the depth to which it was wetted.

One may become familiar with the appearance and feel of soil of a particular type at about the wilting point by examining such soil where it is thoroughly permeated by roots of plants (large weeds or trees) that are wilting. Soil nearer the surface than six inches should be discharged, since it may have been affected by evaporation. The appearance and feel of soils at the wilting point will vary with color and texture, so that familiarity should be gained with the range of variations that are encountered in the grove. Since the soil usually dries slightly faster at the "drip" of the tree on the south-west quarter (probably because of higher soil temperature), examination in this quarter should give the first indication of need of water. Only from experience is it possible to estimate about how deep the soil may be allowed to dry out in a particular grove before the trees are in danger of wilting. Because of the time required to cover the grove with irrigation water, however, in most situations it will be desirable to start applying water sometime before the trees show any wilting. Water applied as soon as the soil at a depth of 18 to 24 inches is near the wilting point will probably prevent severe water shortage in groves on soils similar to those examined in this study. If it can be avoided, trees should not be allowed to dry out to the point where they show definite wilting. The

grower is well aware of the ill effects of prolonged wilting, but even before the trees wilt fruit growth is gradually reduced as the tree is subjected to increasing water deficit.

To determine how effective an application of irrigation water has been in wetting the soil that was dried out by tree roots it is necessary to examine the soil in such a manner that variations in distribution of water will be detected. Wherever all of the dry soil was not wetted the line of demarcation between wet and dry soil will be sharp. The soil that is wetted will be wet to field capacity and a few inches below the "wetting front" the soil will be as dry as it was before irrigation water was applied.

The labor and time of examining the soil is greatly reduced by the use of a convenient tool. Either the smallest size of post hole auger obtainable (2 or 3 inches in diameter), or an auger made by welding a four-foot rod with a cross piece at the top to a one inch carpenter's

bit with the cutting flanges and threaded tip ground off, is a fairly convenient tool. In soils in which it can be used a probe made of ½ inch rod is very convenient. It is easily thrust through very wet soil but the resistance to penetrate increases sharply when the dry soil is encountered. In some soils the probe is useless, either because of too little difference in resistance offered by wet and dry soil or because of hard layers.

Determining the depth of wetting after an irrigation gives some idea of the uniformity of distribution with which the water was applied and serves as a basis for estimating the length of time that water should be applied to wet the soil to the desired depth. Without an occasional careful examination of the soil after irrigating, serious faults that might be corrected economically may pass unnoticed.

Keeping the soil covered with growth of some kind will protect it from wind and water erosion.



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Reports Of Our Field Men . . .

SOUTHWEST FLORIDA

Eaves Allison

The long spring dry spell has finally broken over this territory by some good showers beginning about the first of May in some sections and around the middle of the month in others. Many groves suffered during the drought and lost some fruit but in the majority of cases the loss was not too severe. Those groves which were irrigated are in good condition with a good crop set on oranges and with more early grapefruit bloom that was at first expected. The grapefruit crop should be pretty fair. Mite damage especially from the six-spotted mite has been heavy this spring, especially on grapefruit. We are also having plenty of melon. The summer fertilizer application is well under way and will be completed about the middle of June. Picking crews are cleaning up the last of the season's fruit, with prices remaining good.

POLK COUNTY

J. M. (Jim) Sample

We have had some irrigation to do this spring during the early part of the summer, but taking everything into consideration we have had one of the most desirable spring seasons that we have had in many years. We have an excellent orange bloom set and the fruit is now growing off in very fine shape. We have some grapefruit, with most of this fruit set on trees that were thoroughly irrigated, and our marsh seedless bloom is very good. Our tangerines have a very nice crop of fruit set. We are just about through with our summer application of fertilizer and those growers who have not already made their applications will do so before the first of July. Our spray program is well under way and it is safe to say that a large percentage of our growers are going through with a complete program to control both insects and diseases. Fruit prices have gone out of sight—oranges for the canning plants are sky-high and grapefruit is also very high, but growers are

feeling well so it seems that everyone is satisfied.

WEST CENTRAL FLORIDA

E. A. (Mac) McCartney

I have been telling the readers of this column for several months that we have a very nice crop of fruit set on the trees, and this statement has been true, but until we started getting some rain I was beginning to think I would have to take the criticism of a large number of growers in the territory. Our fertilizer application is well under way and providing we do not have any strikes or other labor disorders our entire tonnage will be on the groves by the first of July. It has been only during the past few years that a large percentage of the growers in this section have employed a complete spray program, but now that they have seen the results of the program as far as quality and quantity are concerned the program is being broadened and new growers are taking advantage of a practice that will result in a greater income for every grower. Fruit returns have been entirely satisfactory.

NORTH CENTRAL FLORIDA

V. E. (Val) Bourland

Citrus fruits have been moving at a very rapid rate from this territory during the past few weeks and at the present time it is difficult to find any sizeable crop of fruit that has not been sold. Prices being paid are very good and many growers are sorry now that they sold earlier in the season. Watermelon growers have been getting fair prices for their melons, but those growers that had melons coming in late are wondering what will happen to the price. The melon crop will be short considering the large acreage as blight and anthracnose has hit many fields. If there is one section of the state that has made progress as far as new citrus plantings are concerned, we think it is Lake county. Lake county not only has the finest grove land but also land on which peaches and grapes will grow as

well. This county can truly be the winter Fruit Basket of Florida. Speaking of everything else, we are not forgetting that we are doing an excellent spray program job to keep insects and diseases under control.

HILLSBOROUGH AND PINELLAS COUNTIES

C. S. (Charlie) Little

We have been going right along with our summer application of fertilizer and this operation will be completed by the middle of June. Growers have been using a thoroughly balanced piece of goods containing ample amounts of secondary plant foods. There is very little fruit left in this section and a number of packing houses have already closed. Growers have had a most successful season and are well pleased with prices received for their fruit. Our spray program is being carried through in good shape and we are expecting a bumper crop of quality fruit this fall and next spring. Our grapefruit bloom on seedy varieties will be light unless we get a June bloom and it now appears that we will not have this happen as we are getting plenty of moisture and trees are in good shape.

SOUTH POLK & HIGHLANDS COUNTIES

R. L. (Bob) Padgett

Rains that started about the middle of May were of unestimated value. Up until that time practically all groves that were not equipped with irrigation were in a wilt, and in many instances a great deal of fruit dropped from the trees. We had definite proof that intensive cultivation during an extreme drought will do a lot in bringing trees through in much better condition than those trees on properties that were not cultivated. It is also evident that groves plowed during the fall season will stand more dry weather than those that are not plowed. We are still busy with our summer application of fertilizer and it will be the first of July before this operation is completed. The dry weather retarded our spray program but since we have had some rain all growers are busy getting their diseases and insects under con-

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The Florida State Horticultural Society held its 59th annual meeting in Miami the first week in May and as always it was a heap of pleasure to attend and meet a lot of the folks we've been seein' year after year at these sessions . . . it was mighty disquetin' too to note the absence of some of those stalwart citizens who have played so important a part in these meetin's . . . several of them havin' been called to keep a date with the Grim Reaper who consults no individual's personal convenience.

Everybody who attended the meetin's was certain to find a lot of good ideas which they can profit from . . . and which should result in profit to them when made part of their production programs . . . likewise there was opportunity for some recreation which everybody needs now and then.

The fertilizer folks had done a whale of a job durin' the war years in helpin' both vegetable and citrus growers, not only maintain but increase their production. The world needs heaps of food and while materials was scarce the industry through ingenuity and close cooperation with Experiment Stations and other Research organizations managed to provide growers with the plant foods their soil needed to produce bumper crops.

'Course there has been times when the industry has been criticised about the mechanical conditions of some of their goods but it must be remembered that everyone had plenty of problems and if some one outfit happened to be less fortunate than another it doesn't mean that they weren't tryin' their level best to do a good job. Everything considered we say the fertilizer companies deserve a heap of credit for doin' as well as they did.

Hon. Clifton A. Woodrum, president of the American Plant Food Council, Inc., made a most human and interestin' talk at the Hort. Society meetin' . . . if you didn't hear him be sure to read his paper THIS FERTILE LAND OF OURS in the Horticultural Society proceedings.

Reports has it that they is a new variety of grapefruit out in California which has a pink skin and flesh of a greenish white color . . . well here in Florida we have pink skins, red skins and yellow skins, but what's a lot more important we have a grapefruit with taste appeal that has been satisfyin' to the customers palates all over the nation for a long time . . . and they ain't nowhere that you'll find grapefruit with more vitamins in 'em than we produce right here in good old Florida.

Uncle Bill

Some Examples Of State Plant Board Inspection Work . . .

Inspectors of the State Plant Board are authorized by law to enter into or upon any place and open any bundle, package or other container containing, or thought to contain, plants or plant products. Happily, it is seldom necessary for the Board's nursery, grove, quarantine, or apiary inspectors to invoke the assistance of the law in the performance of their duties.

The nurserymen of Florida appreciate the fact that prevention of entry of destructive plant pests, as well as the control of those that do gain entry, is necessary if they are to continue in business. They know that the movement of nursery stock affected with a plant insect or disease is one of the best methods for the widespread dissemination of plant pests.

This was clearly demonstrated a number of years ago in the case of citrus canker. It was found during the course of the first inspection of citrus trees moved from suspicious nurseries that 90 percent of the sixty-two centers of infection of citrus canker discovered in twenty-one counties of the state were caused by diseased trees moved from one nursery. Nurserymen also know that the final eradication of citrus canker was delayed and cases increased, because of the lack of records as to the movement of trees from Florida nurseries to destinations in the state. Several months' work and considerable expense were necessary to obtain this information through searching the records of the nurseries, the transportation companies, and the post office. They do not object, therefore, to the Board's requirement that they report the movement of all nursery stock sold to the Nursery Inspector at Gainesville. With this information at hand, it would not take long to complete a list of all nursery stock moved from one nursery in the event that some destructive pest was found therein at a later date.

Nurserymen welcome the Board's nursery inspectors when they make their regular visits. They cheerfully accept their suggestions as to pest control measures and frequent-

A. C. BROWN
Commissioner, State Plant Board

ly their suggestions as to cultural procedures.

The term "Grove Inspection" is hardly descriptive of the nature of the work performed by the inspectors assigned to that Department. "General Inspection" might be more appropriate. While they spend the major portion of their time in the state's citrus plantings, they also inspect vegetable and other fruit plantings.

During the fall when the mole cricket bait distribution project is in operation they must supervise the distribution of the material, keep records and observe the results that follow the use of the bait. When it was necessary to treat some five acres in Jacksonville following the collection of six adult Japanese

beetles in traps two years ago, the grove inspectors were assigned to the application of the lead arsenate used for control of this pest. Incidentally, not a single Japanese beetle was collected from any of the 900 traps operated in Jacksonville last year. It is to be hoped that the treatment was responsible for the eradication of the pest.

Grove owners have come to regard expenditures for the Board's grove inspection activities somewhat as they do their payments for premiums on fire insurance. They know that these inspectors cannot prevent entry of destructive plant pests but that their repeated inspections will disclose the presence of any new pest and that eradication measures will be applied at the earliest possible moment. Pest surveys of our groves are particularly important at this time. During the war,

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there was a constant movement of service planes between Florida and foreign countries all over the world. Most of these planes landed at fields at which were stationed customs and plant quarantine inspectors, and all cargoes and baggage were examined. It is a known fact, however, that some planes arrived at fields where inspectors were not stationed. It is possible that in such events foreign fruits and plants infested with destructive plant pests were landed at these fields. Efforts were made to prevent the entry of plant material brought back by returning service men.

While the grove inspectors are constantly looking for the presence of new plant pests, they are also, and for their own protection, looking for vicious dogs and ill-tempered bulls, water moccasins and rattlesnakes, and the pretty little black animals with white stripes that are always ready to spray with materials not recommended for the control of citrus insects.

Probably the most interesting of all the Plant Board inspection activities is performed by the plant quarantine inspectors. They are constantly on the watch for pests from foreign and domestic points. At one port, most of their time is occupied by the inspection of plants brought in by freight, express, and mail. At others the majority of the time of the inspectors is devoted to the inspection of air—and water—craft, together with their stores and cargoes, passengers and baggage, from foreign countries. During the month of March, a total of 467 watercraft and 2023 aircraft were boarded and searched by Plant Board inspectors. During that same period fruit fly larvae were found in fruits on five different occasions. Pink bollworm, bean weevils, and green scale were among the many other interceptions made.

Fortunately, for Florida growers, the inspectors of the United States Customs Service cooperate to the utmost with the Board quarantine inspectors. As a result of this cooperation, a number of plant quarantine inspectors stationed at any one port is the combined total of the Customs and Plant Board inspectors stationed at that place. Some Customs inspectors possess an uncanny ability that enables them to pick out of a crowd the few individuals who are attempting to smuggle some contraband material.

As a result, it is not uncommon to see these inspectors take plants, fruits, and other commodities from

the sleeves of coats carried by passengers, and even from their pockets. One lady was very much embarrassed when an inspector removed from her coat sleeve a silk stocking that contained six mangoes, a fruit prohibited entry on account of the risk of introducing fruit flies. Passengers detected in attempts to smuggle are usually fined by the Customs inspectors.

Customs and Plant Board inspectors are familiar with most hiding places on board ships used by the crews for articles they intend to slip ashore. In spite of this knowledge, it is not uncommon for Plant Board inspectors to find fruits and plants on many ships from foreign countries. In such instances, the Customs officers fine the captain of the ship for his failure to include the fruits or plants on the ship's manifest.

At times, hidden fruits and vegetables are overlooked by the inspectors. But when the member of the crew attempts to take them off the ship he is usually detected by the Customs guard on duty on the dock and the material is confiscated.

As a rule, the volume of the material that must be confiscated or treated by plant quarantine inspectors to remove the pest risk is rather small. But at times he is confronted with tons of sand or soil used as ballast by ships. Soil from foreign countries affords an excellent means for the entry of insects and diseases. At a few ports in Florida the water in the harbor is so deep that the material may be safely disposed of by dumping in areas set aside for this purpose by harbor authorities. But as most of the newer ships are equipped with steam lines throughout the holds for use in case of fire, the plant quarantine inspectors take no chances and require that the ballast and holds be treated with live steam for periods up to eight hours.

Most tourists appreciate the need for excluding foreign plants and plant products in order to prevent entry of destructive plant pests. But every now and then Plant Board inspectors encounter individuals who vigorously protest the loss of a few plants, flowers, or fruits. A bride of a few hours may object vigorously, and tearfully, against the loss of her bridal bouquet. An elderly gentleman who considers himself not fully clothed without a flower in his buttonhole may object to its loss. A citizen of this country may consider as an outrage the confiscation of a rare

plant brought from some foreign shore. But the plant quarantine inspector knows that every one of these plants or flowers may introduce some foreign pest likely to equal in destructiveness the Japanese beetle, citrus canker, European corn borer, and many other pests brought in from foreign countries, and will not be turned aside from the performance of his duties by all these protests, even in cases where they are carried to high-ranking government officials.

REVIEWING THE SEASON'S

CITRUS SITUATION—PRESIDENT'S ADDRESS

(Continued from page 8)

growers are raising their share of funds by voluntary contribution from the industry. As soon as we know definitely how much of the expense Florida is to bear, we will undertake the task of raising it. Meanwhile, we understand that Dr. Camp has located an investigator who speaks Spanish and who is willing to take charge of the investigation.

It has been our plan from the start to ask the U. S. Department of Agriculture to investigate the possibility of its being a virus disease since they believe that it is and they have already started a study of root stocks to find what stocks can be substituted for sour orange, should that course unfortunately become necessary. Every effort will be made to see that there is no overlapping of effort in this investigation. We need to know how the disease is spread, against what we should quarantine, and we need that information now. We expect to continue our efforts until the investigation is completed.

Most of you are growers of many years standing. You can remember when citrus growing was a hard game and groves were a drug on the market. In recent years groves have been much more profitable, and grove values have strengthened. Groves that sold a few years ago for five hundred dollars per acre are now being purchased by grove owners of many years experience for two thousand dollars per acre and up. Let us not "go to sleep at the switch" and let some pest come in and ruin these values as in the days of Canker and Medfly. Let us also push forward our investigations of canning and processing citrus and developing by-products so that grove values may be sustained despite our rising production.

Annual Report Of Experiment Stations

Highlights of the progress made by the 53 State agricultural experiment stations in solving wartime farm production problems are given in the 1945 report of Dr. James T. Jardine, chief of the Office of Experiment Stations, which has been submitted to Congress by the Secretary of Agriculture.

During the period covered by the report the stations met an unprecedented demand for experiments and information aiding in the production of maximum yields of plant and animal products without soil depletion and the transportation, processing and marketing of these products to greatest advantage. Other projects contributed to the

improvement of living and working conditions on the farm.

Dr. Jardine cites examples of research which brought better understanding of soil management and of fertilizers. Some of these provided more exact knowledge of crop requirements, especially minor soil elements, and methods of applying fertilizers such as in bands, liquid form, and deep placement. These and other new basic facts relating to physical, chemical, and biological properties of soils provided the answers to a multitude of problems and helped to prevent the waste in soil resources that followed World War I.

Nearly 700,000 acres of improved pastures have been established in Florida during the last 10 years.

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Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

MANAGER AVAILABLE for grove and packing house organization. Agricultural College graduate, wide experience in all branches of citrus industry. Highly recommended. Box M, Citrus Industry.

We Thank You...

Your patience during the trying period of the War is appreciated.

Resumption of Peace Time Service will come to you as rapidly as possible.

Florida Telephone Corporation

Serving 14 Counties in Florida
Headquarters: Leesburg, Fla.

FOR SALE—One Farquhar high pressure sprayer. This machine has been mounted on a 1½ ton truck, has large wooden tank, high pressure Fairbank-Morse pump, driven by a 20 HP Noro engine. Has been used a very few hours.
—R. C. Carlisle, Sneads, Florida.

GROVE OPPORTUNITIES — 18 acre grove, seedling orange and grapefruit, budded trees and young grove. 23 unimproved. Liveable tenant house, \$9,500.

16-acre grove, bearing oranges, tangerines and grapefruit, resets and 2-year-old buds. Liveable 2 bedroom house. 4 acres unimproved.

65-acre grove, seedling oranges, grapefruit and tangerines, and Parson Brown, Pineapple, Valencia and King oranges. 8-inch deep well, engine, pump and portable irrigation pipe. 56 acres unimproved suitable for livestock or general farming. 9 room house. \$45,000 with one-third down. New tractor and used grove equipment included if all 3 groves sold to same purchaser.

DONALD RUFF, Broker 3319 San Pedro, Tampa, Florida.

BIG CITRUS GROVE FOR SALE, heavy producer, several varieties oranges and grapefruit, well located near railroad siding, fertile soil, good frost protection. Reasonably priced. For sale by Charlton & Associates, Valuation Engineers and Realty Appraisers, Ft. Lauderdale, Fla.

CITRUS TREES—Best quality usual varieties on sour orange or rough lemon stock. Robt. P. Thornton, c/o Clay Hill Nurseries Co., Box 2880, Tampa, Florida.

IMPROVED JEWEL PEACH TREES—Bud wood selection from outstanding trees in our commercial producing orchards. Limited production of trees requires sale on reservation only. All reservation orders received up to June 1st, 1946 accepted for January-February 1947 delivery. Clay Hill Nurseries Co. P. O. Box 2880, Tampa, Florida.

NOW BOOKING orders for raising citrus trees on sour or lemon stock. John Grieshop Nursery, San Antonio, Florida.

SALESMAN FOR FERTILIZER, Seed and Feed company. Thorough knowledge of agriculture, fruit and vegetable growing and general Florida conditions. Excellent references. Box S, Citrus Industry.

COMPLETE Packing House equipment for sale. Two car load capacity. N. E. McConaghy, Satsuma, Alabama.

FOR SALE—Speed Sprayer with new engine and radiator; both heads: first-class shape. Waverly Growers Cooperative.

WANTED TO BUY — REAL ESTATE — My wife and I desire ten (10) acres or more citrus grove plus additional acreage and home or homesite. Immediate possession not required. Furnish full particulars. Cash or mortgage as you desire. N. W. Oppenheim 155 Humes Place, Memphis 11, Tenn.

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